

SEQUENCE LISTING

<110> University of Utah Research Foundation

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<120> Linear Gamma-Carboxyglutamate Rich Conotoxins

<130> 2314-224-II

<150> US 60/273,639

<151> 2001-03-07

<160> 196

<170> PatentIn version 3.0

<210> 1

<211> 24

<212> PRT

<213> Conus ammiralis

<220>

<221> PEPTIDE

<222> (1)..(24)

<223> Xaa at residue 1 is Gln or pygro-Glu; Xaa at residues 7, 8 and 9 is Glu or gamma-carboxy-Glu; Xaa at residues 13 and 16 is Lys, no r-Lys, N-methyl-Lys, N,N-dimethyl-Lys or N,N,N-trimethyl-Lys

<400> 1

Xaa	Gly	Gln	Asp	Asp	Ser	Xaa	Xaa	Xaa	Asp	Ser	Gln	Xaa	Val	Met	Xaa
1				5				10					15		

His	Gly	Gln	Arg	Arg	Glu	Arg	Arg
			20				

<210> 2

<211> 17

<212> PRT

<213> Conus betulinus

<220>

<221> PEPTIDE

<222> (1)..(17)

<223> Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; Xaa at residue 17 is Pro or hydroxy-Pro

<400> 2

Gly	Gly	Xaa	Xaa	Val	Arg	Xaa	Ser	Ala	Xaa	Thr	Leu	His	Xaa	Leu	Thr
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Xaa

<210> 3

<211> 17

20010307

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 <222> (1)..(17)
 <223> Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; X
 aa at residue 17 is Pro or hydroxy-Pro

<400> 3
 Gly Gly Xaa Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Ile Thr
 1 5 10 15

Xaa

<210> 4
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 <213> Conus betulinus

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 <222> (1)..(17)
 <223> Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; X
 aa at residue 17 is Pro or hydroxy-Pro

<400> 4
 Asp Gly Xaa Xaa Val Arg Xaa Ala Ala Xaa Thr Leu Asn Xaa Leu Thr
 1 5 10 15

Xaa

<210> 5
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<220>
 <221> PEPTIDE
 <222> (1)..(18)
 <223> Xaa at residues 3, 7, 10, 14, 16 and 17 is Glu or gamma-carboxy-G
 lu

<400> 5
 Gly Tyr Xaa Asp Asp Arg Xaa Ile Ala Xaa Thr Val Arg Xaa Leu Xaa
 1 5 10 15

Xaa Ala

<210> 6
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<220>
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 <222> (1)..(17)
 <223> Xaa at residues 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; Xaa
 at residue 17 is Pro or hydroxy-Pro

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<400> 6
 Gly Gly Gly Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Ile Thr
 1 5 10 15

Xaa

<210> 7
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 <212> PRT
 <213> Conus bullatus

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 <222> (1)..(18)
 <223> Xaa at residue 2 is Pro or hydroxy-Pro; Xaa at residues 3, 7, 10, 14, 16 and 17 is Glu or gamma-carboxy-Glu; Xaa at residue 5 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr

<400> 7
 Asn Xaa Xaa Thr Xaa Ile Xaa Ile Val Xaa Ile Ser Arg Xaa Leu Xaa
 1 5 10 15

Xaa Ile

<210> 8
 <211> 20
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 <222> (1)..(20)
 <223> Xaa at residue 2 is Pro or hydroxy-Pro; Xaa at residues 3, 6, 9, 12, 16, 18 and 19 is Glu or gamma-carboxy-Glu; Xaa at residue 5 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr

<400> 8
 Asn Xaa Xaa Thr Xaa Xaa Asn Leu Xaa Leu Val Xaa Ile Ser Arg Xaa
 1 5 10 15

Leu Xaa Xaa Ile
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<210> 9
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 <222> (1)..(19)
 <223> Xaa at residues 3, 4, 8, 11, 15 and 17 is Glu or gamma-carboxy-Glu

<400> 9
 Ser Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Leu
 1 5 10 15

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Xaa Arg Asn

<210> 10
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<400> 10
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 1 5 10 15

Xaa Arg Asp

<210> 11
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 <223> Xaa at residues 3, 4, 8, 11, 15 and 17 is Glu or gamma-carboxy-Glu

<400> 11
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 1 5 10 15

Xaa Arg Asn

<210> 12
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 <222> (1)..(17)
 <223> Xaa at residues 2, 3, 7, 10 and 14 is Glu or gamma-carboxy-Glu

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 Ile Xaa Xaa Gly Leu Ile Xaa Asp Leu Xaa Thr Ala Arg Xaa Arg Asp
 1 5 10 15

Ser

<210> 13
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<222>    (1)..(19)
<223>    Xaa at residue 1 is Gln or pyro-Glu; Xaa at residues 2, 7, 8, 10
and 14 is Glu or gamma-carboxy-Glu; Xaa at residues 4 and 6 is Pr
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o or hydroxy-Pro

<400> 16

Xaa Xaa Thr Xaa Thr Xaa Xaa Xaa Val Xaa Arg His Thr Xaa Arg Leu
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Lys Ser Met

<210> 17

<211> 15

<212> PRT

<213> Conus episcopatus

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<222> (1)..(15)

<223> Xaa at residues 7, 11 and 13 is Glu or gamma-carboxy-Glu; Xaa at residue 14 is Lys, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys or N,N,N-trimethyl-Lys

<400> 17

Gly Gly Lys Asp Ile Val Xaa Thr Ile Thr Xaa Leu Xaa Xaa Ile
1 5 10 15

<210> 18

<211> 19

<212> PRT

<213> Conus figulinus

<220>

<221> PEPTIDE

<222> (1)..(19)

<223> Xaa at residues 2, 3, 4, 7, 11 and 15 is Glu or gamma-carboxy-Glu

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Gly Xaa Xaa Xaa Val Ala Xaa Met Ala Ala Xaa Ile Ala Arg Xaa Asn
1 5 10 15

Gln Ala Asn

<210> 19

<211> 18

<212> PRT

<213> Conus figulinus

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<222> (1)..(18)

<223> Xaa at residue 2 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr Xaa at residues 3, 7, 10, 14 and 17 is Glu or gamma-carboxy-Glu

<220>

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<222> (1)..(18)

<223> Xaa at residue 16 is Lys, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys or N,N,N-trimethyl-Lys

<400> 19

Ser Xaa Xaa Gln Ala Arg Xaa Val Gln Xaa Ala Val Asn Xaa Leu Xaa

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Xaa Arg

<210> 20

<211> 34

<212> PRT

<213> Conus figulinus

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<222> (1)..(34)

<223> Xaa at residue 2 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr Xaa at residues 3, 7, 10, 14 and 17 is Glu or gamma-carboxy-Glu; Xaa at residue 28 is Pro or hydroxy-Pro

<220>

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<222> (1)..(34)

<223> Xaa at residues 16, 20 and 21 is Lys, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys or N,N,N-trimethyl-Lys

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1				5				10						15	

Xaa	Arg	Gly	Xaa	Xaa	Ile	Ile	Met	Leu	Gly	Val	Xaa	Arg	Asp	Thr	Arg
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Gln Phe

<210> 21

<211> 17

<212> PRT

<213> Conus figulinus

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<221> PEPTIDE

<222> (1)..(17)

<223> Xaa at residue 2 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr; Xaa at residues 3, 7, 10, 14, 16 and 17 is Glu or gamma-carboxy-Glu

<400> 21

Xaa	Xaa	Asp	Asp	Arg	Xaa	Ile	Ala	Xaa	Thr	Val	Arg	Xaa	Leu	Xaa	Xaa
1				5				10					15		

Ile

<210> 22

<211> 19

<212> PRT

<213> Conus figulinus

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<222> (1)..(19)

<223> Xaa at residues 5, 6, 9, 12 and 16 is Glu or gamma-carboxy-Glu

30/09/2007

Gly Asn Thr Ala Xaa Xaa Val Arg Xaa Ala Ala Xaa Thr Leu His Xaa
1 5 10 15

<210> 23

<211> 23

<212> PRT

<213> Conus figulinus

 $\langle 220 \rangle$

<221> PEPTIDE

<222> (1) .. (23)

<223> Xaa at residues 8, 12, 15, 19 and 22 is Glu or gamma-carboxy-Glu

Gly Ser Ile Ser Met Gly Phe Xaa His Arg Arg Xaa Ile Ala Xaa Leu
1 5 10 15

Val Arg Xaa Leu Ala Xaa Ile
20

<210> 24

<211> 19

<212> PRT

<213> Conus lynceus

 $\langle 220 \rangle$

<221> PEPTIDE

<222> (1) .. (19)

<223> Xaa at residues 2, 3, 4, 7, 11 and 15 is Glu or gamma-carboxy-Glu

Gly Xaa Xaa Xaa Val Ala Xaa Met Ala Ala Xaa Ile Ala Arg Xaa Asn
1 5 10 15

Ala Ala Asn

<210> 25

<211> 18

<212> PRT

<213> Conus lynceus

$\langle 220 \rangle$

<221> PEPTIDE

<222> (1) .. (18)

<223> Xaa at residue 2 is Lys, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys
or N,N,N-trimethyl-Lys; Xaa at residues 3, 4, 7, 10, 14, 16 and 1
7 is Glu or gamma-carboxy-Glu

Gly Xaa Xaa Xaa Asp Arg Xaa Ile Val Xaa Thr Val Arg Xaa Leu Xaa
1 5 10 15

Xaa Ile

<210> 26

<211> 19

<400> 28
Gly Xaa Xaa Xaa His Ser Xaa Xaa Gln Xaa Cys Leu Arg Xaa Val Arg

1 5 10 15

Val Asn Asn Val Gln Gln Xaa Cys
20

<210> 29
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<213> Conus purpurascens
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<221> PEPTIDE
<222> (1)..(24)
<223> Xaa at residues 2, 3, 4, 10, 14 and 23 is Glu or gamma-carboxy-Glu;
Xaa at residues 7 and 19 is Lys, nor-Lys, N-methyl-Lys, N,N-di-
methyl-Lys or N,N,N-trimethyl-Lys

<220>
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<222> (1)..(24)
<223> Xaa at residue 8 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-
sulpho-Tyr, O-phospho-Tyr or nitro-Tyr

<400> 29
Gly Xaa Xaa Xaa His Ser Xaa Xaa Gln Xaa Cys Leu Arg Xaa Ile Arg
1 5 10 15

Val Asn Xaa Val Gln Gln Xaa Cys
20

<210> 30
<211> 24
<212> PRT
<213> Conus purpurascens
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<221> PEPTIDE
<222> (1)..(24)
<223> Xaa at residues 2, 4, 10, 14 and 23 is Glu or gamma-carboxy-Glu;
Xaa at residues 19 is Lys, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys
or N,N,N-trimethyl-Lys

<220>
<221> PEPTIDE
<222> (1)..(24)
<223> Xaa at residue 6 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-
sulpho-Tyr, O-phospho-Tyr or nitro-Tyr

<400> 30
Gly Xaa Ala Xaa His Xaa Ala Phe Gln Xaa Cys Leu Arg Xaa Ile Asn
1 5 10 15

Val Asn Xaa Val Gln Gln Xaa Cys
20

<210> 31
<211> 15
<212> PRT
<213> Conus purpurascens

<220>

<221> PEPTIDE
 <222> (1)..(15)
 <223> Xaa at residues 3, 4, 7, 10, 13 and 14 is Glu or gamma-carboxy-Glu
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<400> 31
 Gly Leu Xaa Xaa Asp Ile Xaa Phe Ile Xaa Thr Ile Xaa Xaa Ile
 1 5 10 15

<210> 32
 <211> 15
 <212> PRT
 <213> Conus stercusmuscarum

<220>
 <221> PEPTIDE
 <222> (1)..(15)
 <223> Xaa at residues 3, 7, 13 and 14 is Glu or gamma-carboxy-Glu; Xaa
 at residue 11 is Lys, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys or
 N,N,N-trimethyl-Lys

<400> 32
 Ile Thr Xaa Thr Asp Ile Xaa Leu Val Met Xaa Leu Xaa Xaa Ile
 1 5 10 15

<210> 33
 <211> 20
 <212> PRT
 <213> Conus aurisiacus

<220>
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 <222> (1)..(20)
 <223> Xaa at residues 2, 4, 11 and 15 is Glu or gamma-carboxy-Glu; Xaa
 at residue 20 is Lys, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys or
 N,N,N-trimethyl-Lys

<400> 33
 Gly Xaa Asp Xaa Val Ser Gln Met Ser Xaa Xaa Ile Leu Arg Xaa Leu
 1 5 10 15

Glu Leu Gln Xaa
 20

<210> 34
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 <212> DNA
 <213> Artificial

<220>
 <223> oligonucleotide primer

<400> 34
 caggatcctg tatctgctgg tgcccctggt g

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 <212> DNA
 <213> Artificial

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<400> 35

aagctcgagt aacaacgcag agt

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<210> 36

<211> 432

<212> DNA

<213> Conus catus

<400> 36

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ctaggcacgg gcacactaga tcatggaggc gcactgactg aacgccgttc gggtgacgcc 120

acagcgctga gacctgagcc tgtcctcctg cagaaatccg ctgcccgcag caccgacgac 180

agtggcaagg acaggttgac tcagatgaag aggattctca aaaagcaagg aaacacggct 240

aaaagcgacg aagagctact acgagaggat gtagagactg ttttagaact cgaaaggaat 300

ggaaaaagat aatcaagctg agtggtccac gtgacactcg tcagttctaa agtccccaga 360

taaatcgttc cctatcttgc cacattcttt ctttctcttt tcatttaatt ccccaaactc 420

ttcatgttta tt 432

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<213> Conus catus

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Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
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20 25 30Glu Arg Arg Ser Gly Asp Ala Thr Ala Leu Arg Pro Glu Pro Val Leu
35 40 45Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Ser Gly Lys Asp Arg
50 55 60Leu Thr Gln Met Lys Arg Ile Leu Lys Lys Gln Gly Asn Thr Ala Lys
65 70 75 80Ser Asp Glu Glu Leu Leu Arg Glu Asp Val Glu Thr Val Leu Glu Leu
85 90 95Glu Arg Asn Gly Lys Arg
100

<210> 38

<211> 19

<212> PRT

<213> Conus catus

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1000

<220>
 <221> PEPTIDE
 <222> (1)..(19)
 <223> Xaa at residues 3, 4, 8, 11, 15 and 17 is Glu or gamma-carboxy-Glu

<400> 38
 Ser Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Leu
 1 5 10 15

Xaa Arg Asn

<210> 39
 <211> 432
 <212> DNA
 <213> Conus catus

<400> 39
 gcgatgcaac tgtacacgta tctgtatctg ctggtgcccc tggtagacatt ccacctaatc 60
 ctaggcacgg gcacactaga tcatggaggc gcaactgactg aacgccgttc gggtagacgcc 120
 acagcgctga gacctgagcc tgtcctcctg cagaaatccg ctgcccgcag caccgacgac 180
 agtggcaagg acaggttgac tcagatgaag aggattctca aaaagcaagg aaacacggct 240
 aaaggcgacg aagagctact acgagaggat gtagagactg ttttagaaat cgaaagggat 300
 ggaaaaagat aatcaagctg agtggtccac gtggcactcg tcagttctaa agtccccaga 360
 taaatcggtc cctatatttgc cacattcttt ctttctcttt tcatttaatt ccccaaattc 420
 ttcattgttta tt 432

<210> 40
 <211> 102
 <212> PRT
 <213> Conus catus

<400> 40
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 His Leu Ile Leu Gly Thr Gly Thr Leu Asp His Gly Gly Ala Leu Thr
 20 25 30
 Glu Arg Arg Ser Gly Asp Ala Thr Ala Leu Arg Pro Glu Pro Val Leu
 35 40 45
 Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Ser Gly Lys Asp Arg
 50 55 60
 Leu Thr Gln Met Lys Arg Ile Leu Lys Lys Gln Gly Asn Thr Ala Lys
 65 70 75 80
 Gly Asp Glu Glu Leu Leu Arg Glu Asp Val Glu Thr Val Leu Glu Leu
 85 90 95
 Glu Arg Asp Gly Lys Arg
 100

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<210> 41
 <211> 19
 <212> PRT
 <213> Conus catus

<220>
 <221> PEPTIDE
 <222> (1)..(19)
 <223> Xaa at residues 3, 4, 8, 11, 15 and 17 is Glu or gamma-carboxy-Glu

<400> 41
 Gly Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Leu
 1 5 10 15

Xaa Arg Asp

<210> 42
 <211> 432
 <212> DNA
 <213> Conus catus

<400> 42
 gcgatgcaac tgtacacgta tctgtatctg ctggcgcccc tggtagacctt ccacctaatac 60
 ctaggcacgg gcacactaga tcatggaggc gcaactgactg aacgcggttc gggtagacgcc 120
 acagcgctga gacctgagcc tgtcctcctg cagaaatccg ctgcccgcag caccgacgac 180
 agtggcaagg acaggttgac tcagatgaag aggattctca aaaagcaagg aaacacggct 240
 aaaagcgacg aagagctact acgagaggat gtagagactg ttttagaacc cgaaaggaat 300
 ggaaaaagat aatcaagctg agtgttccac gtgacactcg tcagttctaa agtccccaga 360
 taaatcggtc cctatcttgc cacattcttt ctttctcttt tcattttaatt ccccaaattct 420
 ttcattgttta tt 432

<210> 43
 <211> 102
 <212> PRT
 <213> Conus catus

<400> 43
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Ala Pro Leu Val Thr Phe
 1 5 10 15
 His Leu Ile Leu Gly Thr Gly Thr Leu Asp His Gly Gly Ala Leu Thr
 20 25 30
 Glu Arg Arg Ser Gly Asp Ala Thr Ala Leu Arg Pro Glu Pro Val Leu
 35 40 45
 Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Ser Gly Lys Asp Arg
 50 55 60
 Leu Thr Gln Met Lys Arg Ile Leu Lys Lys Gln Gly Asn Thr Ala Lys
 65 70 75 80

Glu Arg Arg Leu Ala Asp Ala Thr Ala Leu Glu Ala Glu Pro Val Leu
35 40 45

Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Ser Leu Val Thr Phe
1 5 10 15


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<210> 52
<211> 107
<212> PRT
<213> Conus catus
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<400>	54
gcgatgcaac tgtacacgta tctgtatctg ctggtgccct tggtgacctt ccaccaatac	60
ctggggcacgg gcacactaga tcattggaggc gcaactgactg aaagccggttc ggctgacgcc	120
acagcactga aaactgagcc tgtcctcctg cagaaaaaccg ctgcccgcag caccgacgac	180
aattggcaaga agaggctgac tcagagggaag aggattctca aaaagcgagg aaacacggct	240
agaaacccccg aaacttatat agagattgtg gagattttcta gggaactcga agagattgga	300
aaaagataaat caagtgggt gttccacgtg aactcgtca gttctgaagt cccgaggtag	360

atcgttccct atttttgcca cactctttct ttctcttttc atttaattcc ccaaattctt 420

catgtttatt 430

<210> 55

<211> 101

<212> PRT

<213> Conus bullatus

<400> 55

Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
1 5 10 15

His Leu Ile Leu Gly Thr Gly Thr Leu Asp His Gly Gly Ala Leu Thr
20 25 30

Glu Arg Arg Ser Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
35 40 45

Leu Gln Lys Thr Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Lys Arg
50 55 60

Leu Thr Gln Arg Lys Arg Ile Leu Lys Lys Arg Gly Asn Thr Ala Arg
65 70 75 80

Asn Pro Glu Thr Tyr Ile Glu Ile Val Glu Ile Ser Arg Glu Leu Glu
85 90 95

Glu Ile Gly Lys Arg
100

<210> 56

<211> 18

<212> PRT

<213> Conus bullatus

<220>

<221> PEPTIDE

<222> (1)..(18)

<223> Xaa at residue 1 is Pro or hydroxy-Pro; Xaa at residues 3, 5, 7, 10, 14, 16 and 17 is Glu or gamma-carboxy-Glu; Xaa at residue 5 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr

<400> 56

Asn Xaa Xaa Thr Xaa Ile Xaa Ile Val Xaa Ile Ser Arg Xaa Leu Xaa
1 5 10 15

Xaa Ile

<210> 57

<211> 435

<212> DNA

<213> Conus bullatus

<400> 57

gcgatgcaac tgtacacgta tctgtatttg ctggtgccct tgggtgacctt ccacctaattc 60

ctggggcacgg gcacactaga tcatggaggc gcaactgactg aacgccgttc ggctgacgcc 120

acagcgctga aacctgagcc tgcctcctg cagaaaaccg ctgcccgcag caccgacgac 180
aatggcaaga agaggctgac tcagaggaag aggattctca aaaagcgagg aaacacggct 240
agaaaccccc aaacttatta taatttagag ctgtgggaga tttctaggga actcgaagaa 300
attggaaaaa gataatcaag ctgggtgttc cacgtgacac tcgtcagttc ttaagtcccg 360
aggtagatcg ttccctatatt ttgccacact ctttctttct cttttcattt aattccccaa 420
actttcatgt ttatt 435

<210> 58
<211> 103
<212> PRT
<213> Conus bullatus

<400> 58
Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
1 5 10 15
His Leu Ile Leu Gly Thr Gly Thr Leu Asp His Gly Gly Ala Leu Thr
20 25 30
Glu Arg Arg Ser Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
35 40 45
Leu Gln Lys Thr Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Lys Arg
50 55 60
Leu Thr Gln Arg Lys Arg Ile Leu Lys Lys Arg Gly Asn Thr Ala Arg
65 70 75 80
Asn Pro Glu Thr Tyr Tyr Asn Leu Glu Leu Val Glu Ile Ser Arg Glu
85 90 95
Leu Glu Glu Ile Gly Lys Arg
100

<210> 59
<211> 20
<212> PRT
<213> Conus bullatus

<220>
<221> PEPTIDE
<222> (1)..(20)
<223> Xaa at residue 1 is Pro or hydroxy-Pro; Xaa at residues 3, 9, 12,
16, 18 and 19 is Glu or gamma-carboxy-Glu; Xaa at residues 5 and
6 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-
phospho-Tyr or nitro-Tyr

<400> 59
Asn Xaa Xaa Thr Xaa Xaa Asn Leu Xaa Leu Val Xaa Ile Ser Arg Xaa
1 5 10 15
Leu Xaa Xaa Ile
20

Conus bullatus

<210> 60
 <211> 425
 <212> DNA
 <213> Conus betulinus

<400> 60
 gcgatgcaac tgtacacgta tctgtatctg ctggtgcccc tggtgacctt ctacctaatc 60
 ctaggcacgg gcacgctagg tcatggaggc gcaactgactg aacgccgttt ggctgatgcc 120
 acagcgctga aacctgagcc tgtcctcctg cagaaatccg ccgcccgcag caccgacgac 180
 aatggcaagg acaggttgac tcagatgatac aggattctca aaaagcgagg aaacatggcc 240
 agaggcggcg aagaagttag agagtctgca gagactcttc atgaactcac gccgtaggaa 300
 aaagaaaaag attaatcaag ctgggtgtcc cacgtgacac tcgtcagttc taaagtcccc 360
 agtttcctat ctttgccacg tttctttttc ttttcattca attccccaaa tctttcatgt 420
 ttatt 425

<210> 61
 <211> 95
 <212> PRT
 <213> Conus betulinus

<400> 61
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 Tyr Leu Ile Leu Gly Thr Gly Thr Leu Gly His Gly Gly Ala Leu Thr
 20 25 30
 Glu Arg Arg Leu Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
 35 40 45
 Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Asp Arg
 50 55 60
 Leu Thr Gln Met Ile Arg Ile Leu Lys Lys Arg Gly Asn Met Arg Gly
 65 70 75 80
 Glu Glu Val Arg Glu Ser Ala Glu Thr Leu His Glu Leu Thr Pro
 85 90 95

<210> 62
 <211> 17
 <212> PRT
 <213> Conus betulinus

<220>
 <221> PEPTIDE
 <222> (1)..(17)
 <223> Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; X
 aa at residue 17 is Pro or hydroxy-Pro

<400> 62
 Gly Gly Xaa Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Leu Thr
 1 5 10 15

CCDS: C12345.1

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<210> 63
<211> 425
<212> DNA
<213> Conus betulinus
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<210> 64
<211> 95
<212> PRT
<213> Conus betulinus
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<210> 65
<211> 17
<212> PRT
<213> Conus betulinus
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<220>
<221> PEPTIDE
<222> (1)..(17)
<223> Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; X
aa at residue 17 is Pro or hydroxy-Pro

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<400> 65

Gly Gly Xaa Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Ile Thr
 1 5 10 15

Xaa

<210> 66

<211> 425

<212> DNA

<213> Conus betulinus

<400> 66

gcgatgcaac tgtacacgta tctgtatctg ctggtgcccc tggtgacctt ctacctaate 60
 ctaggcacgg gcacgctagg tcatggaggc gcactgactg aacgccgttt ggctgacgcc 120
 acagcgctga aacctaagcc tatcctcctg cagaaatccg ccgcccgcag cactgacgac 180
 aatggcaagg acaggttgac tcagatgadc aggattctca aaaagcgagg aaacatgggc 240
 agagacggcg aagaagtcag agaggctgca gagactctta atgaactcac gccgtaggaa 300
 aaagaaaaag attaatacaag ctgggtgttc cacgtgacac tcgtcagttc taaagtaccc 360
 agtttcctat ctttgccacg tttctttttc tttccattca attccccaaa tctttcatgt 420
 ttatt 425

<210> 67

<211> 97

<212> PRT

<213> Conus betulinus

<400> 67

Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 Tyr Leu Ile Leu Gly Thr Gly Thr Leu Gly His Gly Gly Ala Leu Thr
 20 25 30
 Glu Arg Arg Leu Ala Asp Ala Thr Ala Leu Lys Pro Lys Pro Ile Leu
 35 40 45
 Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Asp Arg
 50 55 60
 Leu Thr Gln Met Ile Arg Ile Leu Lys Lys Arg Gly Asn Met Gly Arg
 65 70 75 80
 Asp Gly Glu Glu Val Arg Glu Ala Ala Glu Thr Leu Asn Glu Leu Thr
 85 90 95

Pro

<210> 68

<211> 17

<212> PRT

<213> Conus betulinus

<220>

<221> PEPTIDE
 <222> (1)..(17)
 <223> Xaa at residues 3, 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; X
 aa at residue 17 is Pro or hydroxy-Pro

<400> 68
 Asp Gly Xaa Xaa Val Arg Xaa Ala Ala Xaa Thr Leu Asn Xaa Leu Thr
 1 5 10 15

Xaa

<210> 69
 <211> 437
 <212> DNA
 <213> Conus betulinus

<400> 69
 gcgatgcaac tgtacacgta tctgtatctg ctggtgcccc tggtgacctt ccacctaatc 60
 ctaggcacgg gcacgctagg tcatggaggc gcactgactg aaagccgttc ggctgacgcc 120
 acagcactga aaccagggcc tgtcctcctg cagaaatccg ctgcccgcag caccgacgac 180
 aatggcaagg acaggttgac tcagatgaag aggactctca aaaagcgagg aaacacggcc 240
 agaggctacg aagatgatag agagattgca gagactgtta gagaactcga ggaagcagga 300
 aaatgaaaaa ga'ttaaatcaa gctgggtggtt ccacgtgaca cttgtcagtt ctaaagtccc 360
 cagatagatc gttccctatt tttgccacat tctttttttc tcttttcatt taattcccca 420
 aatctttcat gtttatt 437

<210> 70
 <211> 98
 <212> PRT
 <213> Conus betulinus

<400> 70
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15

His Leu Ile Leu Gly Thr Gly Thr Leu Gly His Gly Gly Ala Leu Thr
 20 25 30

Glu Ser Arg Ser Ala Asp Ala Thr Ala Leu Lys Pro Gly Pro Val Leu
 35 40 45

Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Asp Arg
 50 55 60

Leu Thr Gln Met Lys Arg Thr Leu Lys Lys Arg Gly Asn Thr Arg Tyr
 65 70 75 80

Glu Asp Asp Arg Glu Ile Ala Glu Thr Val Arg Glu Leu Glu Glu Ala
 85 90 95

Gly Lys

<210> 71

<211> 18
 <212> PRT
 <213> Conus betulinus

<220>
 <221> PEPTIDE
 <222> (1)..(18)
 <223> Xaa at residue 2 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr; Xaa at residue 3, 7, 10, 14, 16 and 17 is Glu or gamma-carboxy-Glu

<400> 71
 Gly Xaa Xaa Asp Asp Arg Xaa Ile Ala Xaa Thr Val Arg Xaa Leu Xaa
 1 5 10 15

Xaa Ala

<210> 72
 <211> 425
 <212> DNA
 <213> Conus betulinus

<400> 72
 gcgatgcaac tgtacacgta tctgtatctg ctggtgccgc tggtagacctt ctacctaatac 60
 ctaggcacgg gcacgctagg tcatggaggc gcaactgactg aacgccgttt ggctgacgcc 120
 acagcgctga aacctgagcc tgtcctcctg cagaaatccg ccgcccgcag cactgacgac 180
 aatggcaagg acaggttgac tcagatgatac aggattctca aaaagcgagg aaacatggcc 240
 agaggcggcg gagaagttag agagtctgca gagactcttc atgaaatcac gccgtaggaa 300
 aaagaaaaag attaatcaag ctgggtgttc cacgtgacac tcgtcagttc taaagtcccc 360
 agtttcctat ctttgccagg tttctttctc ttttcattca attccccaaa tctttcatgt 420
 ttatt 425

<210> 73
 <211> 95
 <212> PRT
 <213> Conus betulinus

<400> 73
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 Tyr Leu Ile Leu Gly Thr Gly Thr Leu Gly His Gly Gly Ala Leu Thr
 20 25 30
 Glu Arg Arg Leu Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
 35 40 45
 Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Asp Arg
 50 55 60
 Leu Thr Gln Met Ile Arg Ile Leu Lys Lys Arg Gly Asn Met Arg Gly
 65 70 75 80
 Gly Glu Val Arg Glu Ser Ala Glu Thr Leu His Glu Ile Thr Pro

85 90 95

<210> 74
<211> 17
<212> PRT
<213> Conus betulinus

<220>
<221> PEPTIDE
<222> (1)..(17)
<223> Xaa at residues 4, 7, 10 and 14 is Glu or gamma-carboxy-Glu; Xaa at residue 17 is Pro or hydroxy-Pro

<400> 74
Gly Gly Gly Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Ile Thr
1 5 10 15
Xaa

<210> 75
<211> 434
<212> DNA
<213> Conus ammiralis

<400> 75
gcgatgcaac tgtacacgta tctgtgtctg ctggtgcccc tggtgacctt ctacctaatt 60
ctaggcacgg gcacactagc tcatggaggc gcactgaccg aacgccgttt ggetcacgcc 120
agagtaatag aacctgatcc tgccccctg gagaactccg ctctccgcag catccgacga 180
caacgacaag gacaggatga ctacagaggaa gaggattctc aaaaagtgat gaaacacggc 240
cagaggcgcg aaagaagata gaaataatgc ggaggctggt agagaaagac tcgaagaaat 300
aggaaaaagg taatcaagct ggggtgtttca cgtgacactc atcagttcta aagtccccag 360
atagatcggt cctattttt gccatattct ttccttctct tttcatgtaa ttccccaaat 420
ctttcatggt tatt 434

<210> 76
<211> 85
<212> PRT
<213> Conus ammiralis

<400> 76
Met Gln Leu Tyr Thr Tyr Leu Cys Leu Leu Val Pro Leu Val Thr Phe
1 5 10 15
Tyr Leu Ile Leu Gly Thr Gly Thr Leu Ala His Gly Gly Ala Leu Thr
20 25 30
Glu Arg Arg Leu Ala His Ala Arg Val Ile Glu Pro Asp Pro Ala Pro
35 40 45
Leu Glu Asn Ser Ala Leu Arg Ser Ile Arg Arg Gln Arg Gln Gly Gln
50 55 60
Asp Asp Ser Glu Glu Glu Asp Ser Gln Lys Val Met Lys His Gly Gln

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65              70              75              80
Arg Arg Glu Arg Arg
      85

<210>  77
<211>  24
<212>  PRT
<213>  Conus ammiralis

<220>
<221>  PEPTIDE
<222>  (1)..(24)
<223>  Xaa at residue 1 is Gln or pyro-Glu; Xaa at residues 7, 8, 9 and
      22 is Glu or gamma-carboxy-Gl

<400>  77
Xaa Gly Gln Asp Asp Ser Xaa Xaa Xaa Asp Ser Gln Lys Val Met Lys
1              5              10              15

His Gly Gln Arg Arg Xaa Arg Arg
      20

<210>  78
<211>  421
<212>  DNA
<213>  Conus episcopatus

<400>  78
gcgatgcaac tgtacacgta tctgtgtctg ctggtgcccc tggtgacctt ctacctaatt      60
ctaggcacgg gcacactagc tcatggaggc gcactgactg aacatcgttc ggccgacgcc      120
acagcactga aacctgagcc tgtcctcctg cagaaatccg ctgcccgcag caccgacgac      180
aacgggcaagg acaggttgac tcggtggaag gggattctca aaaagcgagg aaacacggcc      240
agaggcggga aagatattgt ggagactatt acagaactcg aaaaaatagg aaaaaggtaa      300
tcaagctggg tgttcacgt gacactcatc agttctaaag tcccagata gatcgttccc      360
tatttttgcc atattctttc tttctctttt catgtaattc cccaaatctt tcatgtttat      420
t                                                    421

<210>  79
<211>  96
<212>  PRT
<213>  Conus episcopatus

<400>  79
Met Gln Leu Tyr Thr Tyr Leu Cys Leu Leu Val Pro Leu Val Thr Phe
1              5              10              15

Tyr Leu Ile Leu Gly Thr Gly Thr Leu Ala His Gly Gly Ala Leu Thr
      20              25              30

Glu His Arg Ser Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
      35              40              45

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Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Asp Arg
50 55 60

Leu Thr Arg Trp Lys Gly Ile Leu Lys Lys Arg Gly Asn Thr Arg Gly
65 70 75 80

Lys Asp Ile Val Glu Thr Ile Thr Glu Leu Glu Lys Ile Gly Lys Arg
85 90 95

<210> 80

<211> 15

<212> PRT

<213> Conus episcopatus

<220>

<221> PEPTIDE

<222> (1)..(15)

<223> Xaa at residues 7, 11 and 13 is Glu or gamma-carboxy-Glu

<400> 80

Gly Gly Lys Asp Ile Val Xaa Thr Ile Thr Xaa Leu Xaa Lys Ile
1 5 10 15

<210> 81

<211> 433

<212> DNA

<213> Conus lynceus

<400> 81

gcgatgcaac tgtacacgta tctgtatctg ctggtgcccc tggtagacctt ccacctaatac 60

ctaggcacgg gcacactaga tcatggaggc gcaactgactg aacgccgttc gactgatgcc 120

atagcactga aacctgagcc tgtcctcctg cagaaatcct ctgcccgcag caccgacgat 180

aatggcaacg acaggttgac tcagatgaag aggatcctca aaaagcgagg aaacaaagcc 240

agaggcgaag aagaagttgc aaaaatggcg gcagagattg ccagagaaaa cgctgcaaata 300

gggaaatgat aatcaagttg ggtgttccac gtgacactcg tcagttctaa agtccccaga 360

tagatcgttc cctatTTTTTg ccacattcctt tctttctctt ttcatttaata tccccaaatac 420

tttcatgttt att 433

<210> 82

<211> 99

<212> PRT

<213> Conus lynceus

<400> 82

Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
1 5 10 15

His Leu Ile Leu Gly Thr Gly Thr Leu Asp His Gly Gly Ala Leu Thr
20 25 30

Glu Arg Arg Ser Thr Asp Ala Ile Ala Leu Lys Pro Glu Pro Val Leu
35 40 45

Leu Gln Lys Ser Ser Ala Arg Ser Thr Asp Asp Asn Gly Asn Asp Arg

Asn Gly Lys

<400> 83
Gly Xaa Xaa Xaa Val Ala Lys Met Ala Ala Xaa Ile Ala Arg Xaa Asn
1 5 10 15

<210>	84
<211>	430
<212>	DNA
<213>	Conus lynceus

<210>	85
<211>	101
<212>	PRT
<213>	Conus lynceus

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<400>      85
Met  Gln  Leu  Tyr  Thr  Tyr  Leu  Tyr  Leu  Leu  Val  Pro  Leu  Val  Ile  Phe
1          5          10          15

Tyr  Leu  Ile  Leu  Gly  Thr  Gly  Thr  Leu  Gly  His  Gly  Gly  Thr  Leu  Thr
          20          25          30

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<400> 88
Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe

1	5	10	15
His Leu Ile Leu Gly Thr Gly Thr Leu Asp His Gly Gly Ala Leu Thr	20	25	30
Glu Arg Arg Ser Thr Asp Ala Ile Ala Leu Lys Pro Glu Pro Val Leu	35	40	45
Leu Gln Lys Ser Ser Ala Arg Ser Thr Asp Asp Asn Gly Asn Asp Arg	50	55	60
Leu Ile Gln Met Lys Arg Ile Leu Lys Lys Arg Gly Asn Lys Arg Glu	65	70	75
Glu Glu Val Ala Lys Met Ala Ala Glu Leu Thr Arg Glu Glu Ala Val	85	90	95

Lys Gly Lys

<210> 89
 <211> 19
 <212> PRT
 <213> Conus lynceus

 <220>
 <221> PEPTIDE
 <222> (1)..(19)
 <223> Xaa at residues 2, 3, 4, 11, 15 and 16 is Glu or gamma-carboxy-Gl

<400> 89
 Gly Xaa Xaa Xaa Val Ala Lys Met Ala Ala Xaa Leu Thr Arg Xaa Xaa
 1 5 10 15

Ala Val Lys

<210> 90
 <211> 433
 <212> DNA
 <213> Conus figulinus

 <400> 90
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 ctaggcacgg gcacgctagg tcatggaggc gcaactgactg aacgccggtt ggctgacgcc 120
 acagcgctga aacctgagcc tgtcctcctg cagaaatccg ctgccgcag caccgacgac 180
 aatgacaagg acaggctgac ccagatgaag aggattttca aaaagcgagg aaacaaagcc 240
 agaggcgagg aagaagttgc agagatggcg gcagagattg caagagaaaa tcaagcaaac 300
 gggaaaagat aatcaaactg ggtgttccac gtgacactcg tcagttctaa agtccccaga 360
 taggtcgttc tctatgtttg ccacattctt tctttttctt ttcatttaatt tccccaaatc 420
 tttcatgttt att 433

 <210> 91
 <211> 100

<212> PRT
<213> Conus figulinus

<400> 91
Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
1 5 10 15
Tyr Leu Ile Leu Gly Thr Gly Thr Leu Gly His Gly Gly Ala Leu Thr
20 25 30
Glu Arg Arg Leu Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
35 40 45
Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Asp Lys Asp Arg
50 55 60
Leu Thr Gln Met Lys Arg Ile Phe Lys Lys Arg Gly Asn Lys Arg Glu
65 70 75 80
Glu Glu Val Ala Glu Met Ala Ala Glu Ile Ala Arg Glu Asn Gln Ala
85 90 95
Asn Gly Lys Arg
100

<210> 92
<211> 19
<212> PRT
<213> Conus figulinus

<220>
<221> PEPTIDE
<222> (1)..(19)
<223> Xaa at residues 2, 3, 4, 7, 11 and 15 is Glu or gamma-carboxy-Glu

<400> 92
Gly Xaa Xaa Xaa Val Ala Xaa Met Ala Ala Xaa Ile Ala Arg Xaa Asn
1 5 10 15

Gln Ala Asn

<210> 93
<211> 431
<212> DNA
<213> Conus figulinus

<400> 93
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ctagggacgg gcacactagc tcatggaggc gcaccgactg aacgccgttt ggctgacacc 120
acagcactga aaccgagca tgtcctcctg cagatgtccg ctgcccgcag caccaacgat 180
aatggcaagg acaggttgac tcagatgaag aggattctca aaaagcaagg aaacacagcc 240
agaagctacg aacaagctag agaagttcag gaggctgtta atgaactcaa ggaaagaggt 300
aaaaagataa tcatgctggg tgttccacgt gacactcgtc agttctaaag cccccagata 360
gattgttccg tatttttacc acgttctttt tttctctttt catttaattc cccaaatctt 420

tcatgtttat t

431

<210> 94
 <211> 114
 <212> PRT
 <213> Conus figulinus

<400> 94
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 Tyr Leu Ile Leu Gly Thr Gly Thr Leu Ala His Gly Gly Ala Pro Thr
 20 25 30
 Glu Arg Arg Leu Ala Asp Thr Thr Ala Leu Lys Pro Glu His Val Leu
 35 40 45
 Leu Gln Met Ser Ala Ala Arg Ser Thr Asn Asp Asn Gly Lys Asp Arg
 50 55 60
 Leu Thr Gln Met Lys Arg Ile Leu Lys Lys Gln Gly Asn Thr Ala Arg
 65 70 75 80
 Ser Tyr Glu Gln Ala Arg Glu Val Gln Glu Ala Val Asn Glu Leu Lys
 85 90 95
 Glu Arg Gly Lys Lys Ile Ile Met Leu Gly Val Pro Arg Asp Thr Arg
 100 105 110
 Gln Phe

<210> 95
 <211> 18
 <212> PRT
 <213> Conus figulinus

<220>
 <221> PEPTIDE
 <222> (1)..(18)
 <223> Xaa at residue 2 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr; Xaa at residues 3, 7, 10, 14 and 17 is Glu or gamma-carboxy-Glu

<400> 95
 Ser Xaa Xaa Gln Ala Arg Xaa Val Gln Xaa Ala Val Asn Xaa Leu Lys
 1 5 10 15

Xaa Arg

<210> 96
 <211> 431
 <212> DNA
 <213> Conus figulinus

<400> 96
 gcgatgcaac tgtacacgta tctgtatctg ctggtgcccc tggtagacctt ctacctaatac 60
 ctaggggacgg gcacactagc tcatggaggc gcaccgactg aacgccgttt ggctgacacc 120

115
 114
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 112
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 7
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 3
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<210> 97
<211> 114
<212> PRT
<213> Conus figulinus
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Gln Phe

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<210> 98
<211> 34
<212> PRT
<213> Conus figulinus
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<220>
<221> PEPTIDE
<222> (1)..(34)
<223> Xaa at residue 2 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-
sulpho-Tyr, O-phospho-Tyr or nitro-Tyr; Xaa at residues 3, 7, 10,
14 and 17 is Glu or gamma-carboxy-Glu; Xaa at residue 28 is Pro
or hydroxy-Pro
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```

<400> 98
Ser Xaa Xaa Gln Ala Arg Xaa Val Gln Xaa Ala Val Asn Xaa Leu Lys
1      5      10
Xaa Arg Gly Lys Lys Ile Ile Met Leu Gly Val Xaa Arg Asp Thr Arg
      20      25      30

```

Gln Phe

<210> 99
 <211> 429
 <212> DNA
 <213> Conus figulinus

<400> 99
 gcgatgcaac tgtacacgta tctgtatctg ctggtgcccc tgggtgacgtt ccacctaatc 60
 ctaggcacgg gcacactagc tcatggaggc gcactggctg aacgccgttt ggctgacgcc 120
 acagcgctga aacctgagcc tgtcctcctg cagaaatccg ctgcccgcag caccgacgac 180
 aatggcaagg acagggttgac tgagatgaag aggattctca aaaagcgagg aaacacggcc 240
 agagactacg aagatgatag agagattgca gagactgtta gagaactcga agaaataggt 300
 aaaagataat caagctgggt gttcaattga cactcatcag ttctaaagtc cccagataga 360
 tcgttcccta attttgccac gttctttctt tctcttttca ttttaattccc caaatctttc 420
 atgtttatt 429

<210> 100
 <211> 99
 <212> PRT
 <213> Conus figulinus

<400> 100
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 His Leu Ile Leu Gly Thr Gly Thr Leu Ala His Gly Gly Ala Glu Arg
 20 25 30
 Arg Leu Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu Leu Gln
 35 40 45
 Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Asp Arg Leu Thr
 50 55 60
 Glu Met Lys Arg Ile Leu Lys Lys Arg Gly Asn Thr Ala Arg Asp Tyr
 65 70 75 80
 Glu Asp Asp Arg Glu Ile Ala Glu Thr Val Arg Glu Leu Glu Glu Ile
 85 90 95

Gly Lys Arg

<210> 101
 <211> 18
 <212> PRT
 <213> Conus figulinus

<220>
 <221> PEPTIDE
 <222> (1)..(18)
 <223> Xaa at residue 2 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-

sulpho-Tyr, O-phospho-Tyr or nitro-Tyr; Xaa at residues 3, 7, 10, 14, 16 and 17 is Glu or gamma-carboxy-Glu

<400> 101

Asp Xaa Xaa Asp Asp Arg Xaa Ile Ala Xaa Thr Val Arg Xaa Leu Xaa
1 5 10 15

Xaa Ile

<210> 102

<211> 419

<212> DNA

<213> Conus figulinus

<400> 102

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ctaggcacgg gcacgctagg tcatggaggc gcaactgactg aacgccgttt ggctgacgcc 120
acagcgctga aacctgagcc tgtcctcctg cagaaatccg ctgcccgag caccgacgac 180
aatggcaagg acaggttgac tcagatgaag gggactgtca aaaagcgagg aaacacggcc 240
gaagaagtta gagaggctgc agagactcct catgaactct cgctgtagga aaaagaaaaa 300
gattaatcaa gctgggtggt ccacgtgaca ctgcgcagtt ctaaagtccc cagttcccta 360
tctttgccac gttttttctt tctcttttca tccaattccc caaatctttc atgtttatt 419

<210> 103

<211> 94

<212> PRT

<213> Conus figulinus

<400> 103

Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
1 5 10 15

Tyr Leu Ile Leu Gly Thr Gly Thr Leu Gly His Gly Gly Ala Leu Thr
20 25 30

Glu Arg Arg Leu Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
35 40 45

Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Gly Lys Asp Arg
50 55 60

Leu Thr Gln Met Lys Gly Thr Val Lys Lys Arg Gly Asn Thr Ala Glu
65 70 75 80

Glu Val Arg Glu Ala Ala Glu Thr Leu His Glu Leu Ser Leu
85 90

<210> 104

<211> 19

<212> PRT

<213> Conus figulinus

<220>

<221> PEPTIDE

<211> 23

<212> PRT
<213> Conus figulinus

<220>
<221> PEPTIDE
<222> (1)..(23)
<223> Xaa at residues 8, 12, 15, 19 and 22 is Glu or gamma-carboxy-Glu

<400> 107
Gly Ser Ile Ser Met Gly Phe Xaa His Arg Arg Xaa Ile Ala Xaa Leu
1 5 10 15

Val Arg Xaa Leu Ala Xaa Ile
20

<210> 108
<211> 427
<212> DNA
<213> Conus distans

<400> 108
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caaggcacgg gcacactagg ccatggaggc gcaactgactg aaggccgttc ggctgacgcc 120
acagcgccga aacctgaacc tgtcctcctg cagaaatccg atgcccgcag cgccgacgac 180
aacggcaagg acaagttgac tcagatgaag aggactctga aaaagcaagg acacattgcc 240
agaaccataa ctgctgaaga ggcagagagg actagtgaag gaatgtcatc aatgggaaaa 300
agataatcaa gctgggtggt ccacgtgaca ctcgtcagtt ctaaagtccc cagataaatc 360
gttcctgtgt tttgccctgt tctttctttc tcttttcatt caattcccca aatctttcat 420
gtttatt 427

<210> 109
<211> 98
<212> PRT
<213> Conus distans

<400> 109
Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Ala Phe
1 5 10 15
His Leu Ile Gln Gly Thr Gly Thr Leu Gly His Gly Gly Ala Leu Thr
20 25 30
Glu Gly Arg Ser Ala Asp Ala Thr Ala Pro Lys Pro Glu Pro Val Leu
35 40 45
Leu Gln Lys Ser Asp Ala Arg Ser Ala Asp Asp Asn Gly Lys Asp Lys
50 55 60
Leu Thr Gln Met Lys Arg Thr Leu Lys Lys Gln Gly His Ile Ala Arg
65 70 75 80
Thr Ile Thr Ala Glu Glu Ala Glu Arg Thr Ser Met Ser Ser Met Gly
85 90 95

Lys Arg

<210> 110

<211> 17

<212> PRT

<213> Conus distans

<220>

<221> PEPTIDE

<222> (1)..(17)

<223> Xaa at residues 5, 6, 8 and 12 is Glu or gamma-carboxy-Glu

<400> 110

Thr	Ile	Thr	Ala	Xaa	Xaa	Ala	Xaa	Arg	Thr	Ser	Xaa	Arg	Met	Ser	Ser
1				5					10					15	

Met

<210> 111

<211> 415

<212> DNA

<213> Conus distans

<400> 111

g	c	g	a	t	g	c	a	a	c	t	g	t	a	c	a	c	g	t	a		t	c	t	g	t	a	t	a	c	c	c	t	g	t	g	g	c	c	t	t		c	c	a	c	t	a	a	t	c		60			
c	a	a	g	g	a	a	c	g	g		g	c	a	c	g	t	a	g	g		c	c	a	t	g	g	a	g	g	c		g	c	a	c	t	g	a	c	t	g		a	a	g	g	c	c	g	t	t	c		120	
a	c	a	g	c	g	c	c	g	a		a	a	c	t	g	a	a	c		t	g	t	g	c	t	g	t	g		c	a	g	a	a	t	c	g	g		a	t	g	c	c	c	g	c	a	g		180				
a	a	c	g	c	a	a	g	g		a	c	a	a	g	t	t	g	a	c		t	c	a	g	a	t	g	a	a	g		a	a	a	g	c	a	a	g	a		a	a	c	c	c	c	a	a	c	t		240		
c	c	t	g	a	a	g	a	g	g		t	a	g	a	c	g	c	c	a		t	a	c	c	g	a	a	a	g	a		c	t	c	a	a	a	a	g	c	a		t	g	g	g	a	a	a	a	a	g		300	
t	g	g	g	t	g	t	t	c		a	c	g	t	g	a	c	a	c	t		c	g	t	c	a	g	t	t	c	t		a	a	a	g	t	c	c	c	c	a		g	a	t	g	g	a	t	c	g	t		360	
t	g	c	c	c	c	g	t	t	c		t	t	t	c	g	t	t	c	t	c		t	t	t	t	c	a	t	t	c	a		a	t	t	c	c	c	c	a	a	a		t	c	t	t	t	c	a	t	g	t		415

<210> 112

<211> 96

<212> PRT

<213> Conus distans

<400> 112

Met	Gln	Leu	Tyr	Thr	Tyr	Leu	Tyr	Leu	Leu	Val	Ser	Leu	Val	Ala	Phe
1				5					10					15	

His	Leu	Ile	Gln	Gly	Thr	Gly	Thr	Leu	Gly	His	Gly	Gly	Ala	Leu	Thr
			20					25					30		

Glu	Gly	Arg	Ser	Ala	Asp	Ala	Thr	Ala	Pro	Lys	Pro	Glu	Pro	Val	Leu
		35					40					45			

Val	Gln	Lys	Ser	Asp	Ala	Arg	Ser	Ala	Asp	Asp	Asn	Arg	Lys	Asp	Lys
	50					55					60				

Leu	Thr	Gln	Met	Lys	Arg	Ile	Leu	Lys	Lys	Gln	Glu	Thr	Pro	Thr	Pro
65					70					75					80

Glu Glu Val Glu Arg His Thr Glu Arg Leu Lys Ser Met Gly Lys Arg

85 90 95

<210> 113
<211> 19
<212> PRT
<213> Conus distans

<220>
<221> PEPTIDE
<222> (1)..(19)
<223> Xaa at residue 1 is Gln or pyro-Glu; Xaa at residues 2, 4, 6, 7, 8, 10 and 14 is Glu or gamma-carboxy-Glu

<400> 113
Xaa Xaa Thr Xaa Thr Xaa Xaa Xaa Val Xaa Arg His Thr Xaa Arg Leu
1 5 10 15
Lys Ser Met

<210> 114
<211> 439
<212> DNA
<213> Conus purpurascens

<400> 114
gcgatgcaac tgtacacgta tctgtatctg ctgggtgcccc tgggtgacctt ccacctaatc 60
ctaggcacgg gaatgctagc tcatggagac aactgactg aacgccgttc ggttgacgcc 120
acagcactga aacctgagcc tgtcctcctg cagaaatccg ctgccgcgag caccgacgac 180
aatgacaagg acaggttgac tcagatgaag aggattctca aaaagcgagg aaacaaagcc 240
agaggcgaag aagaacattc caagtatcaa gagtgtctta gagaagtaag agtaaataag 300
gtacaacaag aatgttaatc aagctgggtg ttccacgtga cactcgtcag ttctaaagtc 360
cccagataga tcgttcccgga tttttgccac attctttctt tctcttttca tttaattccc 420
caaatctttc atgtttatt 439

<210> 115
<211> 102
<212> PRT
<213> Conus purpurascens

<400> 115
Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
1 5 10 15
His Leu Ile Leu Gly Thr Gly Met Leu Ala His Gly Asp Thr Leu Thr
20 25 30
Glu Arg Arg Ser Val Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
35 40 45
Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Asp Asn Asp Lys Asp Arg
50 55 60
Leu Thr Gln Met Lys Arg Ile Leu Lys Lys Arg Gly Asn Lys Arg Glu


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<400> 118
Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
1 5 10 15

His Leu Ile Leu Gly Thr Gly Thr Leu Ala His Gly Gly Ala Leu Thr
20 25 30

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Glu Arg Gly Ser Thr Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
35 40 45

Gln Glu Ser Asp Ala Arg Ser Thr Asp Asp Asn Asp Lys Asp Arg Leu
50 55 60

Thr Gln Met Lys Arg Ile Leu Lys Lys Arg Gly Asn Lys Arg Glu Glu
65 70 75 80

Glu His Ser Lys Tyr Gln Glu Cys Leu Arg Glu Val Arg Val Asn Asn
85 90 95

Val Gln Gln Glu Cys
100

<210> 119

<211> 24

<212> PRT

<213> Conus purpurascens

<220>

<221> PEPTIDE

<222> (1)..(24)

<223> Xaa at residues 2, 3, 4, 10, 14 and 23 is Glu or gamma-carboxy-Glu; Xaa at residue 8 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr

<400> 119

Gly Xaa Xaa Xaa His Ser Lys Xaa Gln Xaa Cys Leu Arg Xaa Val Arg
1 5 10 15

Val Asn Asn Val Gln Gln Xaa Cys
20

<210> 120

<211> 439

<212> DNA

<213> Conus purpurascens

<400> 120

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acagcactga aacctgagcc tgtcctcctg cagaaatctg atgcccgcag caccgacgac 180

aatgacaagg acaggttgac tcagatgaag aggattctca aaaagcgagg aaacaaagcc 240

agaggcgaag aagaacattc caagtatcag gagtgtctta gagaaataag agtaaataag 300

gtacaacaag aatgttaatac aagctgggtg ttccacgtga caccgcgtcag ttctaaagtc 360

cccagataga tegtcccta tttttgccac attctttctt tctcttttca ttttaattccc 420

caaatctttc atgtttatt 439

<210> 121

<211> 102

<212> PRT

<213> Conus purpurascens

Conus purpurascens

<400> 121
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 His Leu Ile Leu Ser Thr Gly Thr Leu Ala His Gly Gly Thr Leu Thr
 20 25 30
 Glu Arg Arg Ser Thr Asp Thr Thr Ala Leu Lys Pro Glu Pro Val Leu
 35 40 45
 Leu Gln Lys Ser Asp Ala Arg Ser Thr Asp Asp Asn Asp Lys Asp Arg
 50 55 60
 Leu Thr Gln Met Lys Arg Ile Leu Lys Lys Arg Gly Asn Lys Arg Glu
 65 70 75 80
 Glu Glu His Ser Lys Tyr Gln Glu Cys Leu Arg Glu Ile Arg Val Asn
 85 90 95
 Lys Val Gln Gln Glu Cys
 100

<210> 122
 <211> 24
 <212> PRT
 <213> Conus purpurascens

<220>
 <221> PEPTIDE
 <222> (1)..(24)
 <223> Xaa at residues 2, 3, 4, 10, 14 and 23 is Glu or gamma-carboxy-Glu;
 Xaa at residue 8 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr,
 O-sulpho-Tyr, O-phospho-Tyr or nitro-Tyr

<400> 122
 Gly Xaa Xaa Xaa His Ser Lys Xaa Gln Xaa Cys Leu Arg Xaa Ile Arg
 1 5 10 15
 Val Asn Lys Val Gln Gln Xaa Cys
 20

<210> 123
 <211> 439
 <212> DNA
 <213> Conus purpurascens

<400> 123
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 ctaagcacgg gcacactagc tcatggagac aactgactg aacgccgttc ggttgacgcc 120
 acagcactga aacctgagcc tgtcctcctg cagaaatccg ctgcccgag caccgacgac 180
 gatgacaagg acaggttgac tcagaggaag aggattctca aaaagcaagg aaacaaagcc 240
 agaggcgaag cagaacatta cgcgtttcag gagtgtctta gagaaataaa tgtaaataag 300
 gtacaacaag aatgttaatac aagctgggtg ttctacgtga cactcgtcag ttctaaagtc 360
 cccagataga tcgttccta tttttgccac attctttctt tctcttttca ttttaattccc 420

439

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<400>      124
Met  Gln  Leu  Tyr  Thr  Tyr  Leu  Tyr  Leu  Leu  Val  Pro  Leu  Val  Thr  Phe
 1                               5          10          15

His  Leu  Ile  Leu  Ser  Thr  Gly  Thr  Leu  Ala  His  Gly  Asp  Thr  Leu  Thr
      20          25          30

Glu  Arg  Arg  Ser  Val  Asp  Ala  Thr  Ala  Leu  Lys  Pro  Glu  Pro  Val  Leu
      35          40          45

Leu  Gln  Lys  Ser  Ala  Ala  Arg  Ser  Thr  Asp  Asp  Asp  Asp  Lys  Asp  Arg
 50          55          60

Leu  Thr  Gln  Arg  Lys  Arg  Ile  Leu  Lys  Lys  Gln  Gly  Asn  Lys  Arg  Glu
65          70          75          80

Ala  Glu  His  Tyr  Ala  Phe  Gln  Glu  Cys  Leu  Arg  Glu  Ile  Asn  Val  Asn
      85          90          95

Lys  Val  Gln  Gln  Glu  Cys
      100

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<220>
<221> PEPTIDE
<222> (1)..(24)
<223> Xaa at residues 2, 4, 10, 14 and 23 is Glu or gamma-carboxy-Glu;
Xaa at residue 6 is Tyr, mono-halo-Tyr, di-halo-Tyr, 125I-Tyr, O-
sulpho-Tyr, O-phospho-Tyr or nitro-Tyr
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<400> 125
Gly Xaa Ala Xaa His Xaa Ala Phe Gln Xaa Cys Leu Arg Xaa Ile Asn
1      5      10      15
Val Asn Lys Val Gln Gln Xaa Cys
20

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<210>	126
<211>	421
<212>	DNA
<213>	Conus purpurascens

[illegible]

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 aggggcttag aagaagatat agagtttatt gagacgatcg aagaaattgg aaaaagataa 300
 ccaagctggg tgttcacgt gacactcgtc ggttctaaag tccccagata gatcgttcac 360
 tatttttgcc acattctttc tttctctttt catttaattc cccaaatctt tcatgtttat 420
 t 421

<210> 127
 <211> 96
 <212> PRT
 <213> Conus purpurascens

<400> 127
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 His Leu Ile Leu Gly Thr Gly Met Leu Ala His Gly Asp Thr Leu Thr
 20 25 30
 Glu Arg Arg Ser Val Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
 35 40 45
 Leu Gln Lys Ser Ala Ala Arg Ser Thr Asp Ala Asn Gly Lys Asp Arg
 50 55 60
 Leu Thr Gln Arg Lys Arg Ile Leu Lys Lys Arg Gly Asn Met Arg Leu
 65 70 75 80
 Glu Glu Asp Ile Glu Phe Ile Glu Thr Ile Glu Glu Ile Gly Lys Arg
 85 90 95

<210> 128
 <211> 15
 <212> PRT
 <213> Conus purpurascens

<220>
 <221> PEPTIDE
 <222> (1)..(15)
 <223> Xaa at residues 3, 4, 7, 10, 13 and 14 is Glu or gamma-carboxy-Glu

<400> 128
 Gly Leu Xaa Xaa Asp Ile Xaa Phe Ile Xaa Thr Ile Xaa Xaa Ile
 1 5 10 15

<210> 129
 <211> 418
 <212> DNA
 <213> Conus stercusmuscarum

<400> 129
 gcgatgcaac tgtacacgta tctgtatctg ctggtgcccc tggtgacctt ccacctaatac 60
 ctggggcacgg gcacactaga tcatggaggc gcaactgactg aacgccgttc ggctgacgcc 120

acagcgctga aacctgagcc tgtcctgcag aaatccgctg ccggcagcac cgacgacaac 180
 ggcaaggaca ggttgactca gatgaagagg attctcaaaa agcgaggaaa cacggctaga 240
 atcaccgaaa ctgatataga gcttggtatg aaattagaag aaattggaaa aagataatca 300
 agctgggtgt tccacgtgac actcgtcagt tctgaagtcc cgaggtagat cgttcacctat 360
 ttttgccaca ttctttcttt ctcttttcat gtaattcccc aaatctttca tgttttatt 418

<210> 130
 <211> 97
 <212> PRT
 <213> Conus stercusmuscarum

<400> 130
 Met Gln Leu Tyr Thr Tyr Leu Tyr Leu Leu Val Pro Leu Val Thr Phe
 1 5 10 15
 His Leu Ile Leu Gly Thr Gly Thr Leu Asp His Gly Gly Ala Leu Thr
 20 25 30
 Glu Arg Arg Ser Ala Asp Ala Thr Ala Leu Lys Pro Glu Pro Val Leu
 35 40 45
 Gln Lys Ser Ala Ala Gly Ser Thr Asp Asp Asn Gly Lys Asp Arg Leu
 50 55 60
 Thr Gln Met Lys Arg Ile Leu Lys Lys Arg Gly Asn Thr Ala Arg Ile
 65 70 75 80
 Thr Glu Thr Asp Ile Glu Leu Val Met Lys Leu Glu Glu Ile Gly Lys
 85 90 95

Arg

<210> 131
 <211> 15
 <212> PRT
 <213> Conus stercusmuscarum

<220>
 <221> PEPTIDE
 <222> (1)..(15)
 <223> Xaa at residues 3, 7, 13 and 14 is Glu or gamma-carboxy-Glu
 <400> 131
 Ile Thr Xaa Thr Asp Ile Xaa Leu Val Met Lys Leu Xaa Xaa Ile
 1 5 10 15

<210> 132
 <211> 17
 <212> PRT
 <213> Conus geographus

<220>
 <221> PEPTIDE
 <222> (1)..(17)
 <223> Xaa is Glu or gamma-carboxy-Glu
 <400> 132

Gly Glu Xaa Xaa Leu Gln Xaa Asn Gln Xaa Leu Ile Arg Xaa Lys Ser
 1 5 10 15

Asn

<210> 133
 <211> 24
 <212> PRT
 <213> Conus ammiralis

 <220>
 <221> PEPTIDE
 <222> (1)..(24)
 <223> Xaa is Glu or gamma-carboxy-Glu

 <400> 133

Glx Gly Gln Asp Asp Ser Glu Xaa Xaa Asp Ser Gln Lys Val Met Lys
 1 5 10 15

His Gly Gln Arg Arg Glu Arg Arg
 20

<210> 134
 <211> 17
 <212> PRT
 <213> Conus betulinus

 <220>
 <221> PEPTIDE
 <222> (1)..(17)
 <223> Xaa is Glu or gamma-carboxy-Glu

 <400> 134

Gly Gly Xaa Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Leu Thr
 1 5 10 15

Pro

<210> 135
 <211> 17
 <212> PRT
 <213> Conus betulinus

 <220>
 <221> PEPTIDE
 <222> (1)..(17)
 <223> Xaa is Glu or gamma-carboxy-Glu

 <400> 135

Gly Gly Xaa Xaa Val Arg Xaa Ser Ala Xaa Thr Leu His Xaa Ile Thr
 1 5 10 15

Pro

<210> 136
 <211> 17
 <212> PRT
 <213> Conus betulinus

Conus ammiralis

Glu Ile

<210> 140
 <211> 20
 <212> PRT
 <213> Conus bullatus

<220>
 <221> PEPTIDE
 <222> (1)..(20)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 140
 Asn Pro Xaa Thr Tyr Tyr Asn Leu Xaa Leu Val Xaa Ile Ser Arg Glu
 1 5 10 15
 Leu Glu Glu Ile
 20

<210> 141
 <211> 19
 <212> PRT
 <213> Conus catus

<220>
 <221> PEPTIDE
 <222> (1)..(19)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 141
 Ser Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Leu
 1 5 10 15

Glu Arg Asn

<210> 142
 <211> 19
 <212> PRT
 <213> Conus catus

<220>
 <221> PEPTIDE
 <222> (1)..(19)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 142
 Gly Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Leu
 1 5 10 15

Glu Arg Asp

<210> 143
 <211> 19
 <212> PRT
 <213> Conus catus

<220>
 <221> PEPTIDE
 <222> (1)..(19)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 143

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Ser Asp Xaa Xaa Leu Leu Arg Xaa Asp Val Xaa Thr Val Leu Xaa Pro
 1 5 10 15

Glu Arg Asn

<210> 144
 <211> 17
 <212> PRT
 <213> Conus catus

<220>
 <221> PEPTIDE
 <222> (1)..(17)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 144
 Ile Glu Xaa Gly Leu Ile Xaa Asp Leu Xaa Thr Ala Arg Xaa Arg Asp
 1 5 10 15

Ser

<210> 145
 <211> 15
 <212> PRT
 <213> Conus catus

<220>
 <221> PEPTIDE
 <222> (1)..(15)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 145
 Ile Glu Xaa Gly Leu Ile Xaa Asp Leu Xaa Arg Xaa Arg Asp Ser
 1 5 10 15

<210> 146
 <211> 29
 <212> PRT
 <213> Conus catus

<220>
 <221> PEPTIDE
 <222> (1)..(29)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 146
 Gly Glu Pro Xaa Val Gly Ser Ile Pro Xaa Ala Val Arg Gln Gln Glu
 1 5 10 15

Cys Ile Arg Asn Asn Asn Arg Pro Trp Cys Pro Lys
 20 25

<210> 147
 <211> 17
 <212> PRT
 <213> Conus distans

<220>
 <221> PEPTIDE
 <222> (1)..(17)

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<223> Xaa is Glu or gamma-carboxy-Glu

<400> 147

Thr	Ile	Thr	Ala	Xaa	Xaa	Ala	Xaa	Arg	Thr	Ser	Xaa	Arg	Met	Ser	Ser
1				5					10					15	

Met

<210> 148

<211> 19

<212> PRT

<213> Conus distans

<220>

<221> PEPTIDE

<222> (1)..(19)

<223> Xaa is Glu or gamma-carboxy-Glu

<400> 148

Glx	Glu	Thr	Pro	Thr	Pro	Xaa	Xaa	Val	Xaa	Arg	His	Thr	Xaa	Arg	Leu
1					5				10					15	

Lys Ser Met

<210> 149

<211> 15

<212> PRT

<213> Conus episcopatus

<220>

<221> PEPTIDE

<222> (1)..(15)

<223> Xaa is Glu or gamma-carboxy-Glu

<400> 149

Gly	Gly	Lys	Asp	Ile	Val	Xaa	Thr	Ile	Thr	Xaa	Leu	Xaa	Lys	Ile
1				5					10					15

<210> 150

<211> 19

<212> PRT

<213> Conus figulinus

<220>

<221> PEPTIDE

<222> (1)..(19)

<223> Xaa is Glu or gamma-carboxy-Glu

<400> 150

Gly	Glu	Xaa	Xaa	Val	Ala	Xaa	Met	Ala	Ala	Xaa	Ile	Ala	Arg	Xaa	Asn
1				5					10					15	

Gln Ala Asn

<210> 151

<211> 18

<212> PRT

<213> Conus figulinus

<220>

<210> 155
 <211> 23
 <212> PRT
 <213> Conus figulinus

<220>
 <221> PEPTIDE
 <222> (1)..(23)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 155
 Gly Ser Ile Ser Met Gly Phe Xaa His Arg Arg Xaa Ile Ala Xaa Leu
 1 5 10 15
 Val Arg Glu Leu Ala Glu Ile
 20

<210> 156
 <211> 19
 <212> PRT
 <213> Conus lynceus

<220>
 <221> PEPTIDE
 <222> (1)..(19)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 156
 Gly Glu Xaa Xaa Val Ala Lys Met Ala Ala Xaa Ile Ala Arg Xaa Asn
 1 5 10 15
 Ala Ala Asn

<210> 157
 <211> 18
 <212> PRT
 <213> Conus lynceus

<220>
 <221> PEPTIDE
 <222> (1)..(18)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 157
 Gly Lys Xaa Xaa Asp Arg Xaa Ile Val Xaa Thr Val Arg Xaa Leu Glu
 1 5 10 15
 Glu Ile

<210> 158
 <211> 19
 <212> PRT
 <213> Conus lynceus

<220>
 <221> PEPTIDE
 <222> (1)..(19)
 <223> Xaa is Glu or gamma-carboxy-Glu

155 156 157 158

<400> 158
 Gly Glu Xaa Xaa Val Ala Lys Met Ala Ala Xaa Leu Thr Arg Xaa Glu
 1 5 10 15

Ala Val Lys

<210> 159
 <211> 24
 <212> PRT
 <213> Conus purpurascens

<220>
 <221> PEPTIDE
 <222> (1)..(24)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 159
 Gly Glu Xaa Xaa His Ser Lys Tyr Gln Xaa Cys Leu Arg Xaa Val Arg
 1 5 10 15

Val Asn Lys Val Gln Gln Glu Cys
 20

<210> 160
 <211> 24
 <212> PRT
 <213> Conus purpurascens

<220>
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 <222> (1)..(24)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 160
 Gly Glu Xaa Xaa His Ser Lys Tyr Gln Xaa Cys Leu Arg Xaa Val Arg
 1 5 10 15

Val Asn Asn Val Gln Gln Glu Cys
 20

<210> 161
 <211> 24
 <212> PRT
 <213> Conus purpurascens

<220>
 <221> PEPTIDE
 <222> (1)..(24)
 <223> Xaa is Glu or gamma-carboxy-Glu

<400> 161
 Gly Glu Xaa Xaa His Ser Lys Tyr Gln Xaa Cys Leu Arg Xaa Ile Arg
 1 5 10 15

Val Asn Lys Val Gln Gln Glu Cys
 20

<210> 162
 <211> 24
 <212> PRT
 <213> Conus purpurascens

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<220>
 <221> PEPTIDE
 <222> (1)..(24)
 <223> Xaa is Glu or gamma-carboxy-Glu

 <400> 162
 Gly Glu Ala Xaa His Tyr Ala Phe Gln Xaa Cys Leu Arg Xaa Ile Asn
 1 5 10 15
 Val Asn Lys Val Gln Gln Glu Cys
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 <210> 163
 <211> 15
 <212> PRT
 <213> Conus purpurascens

 <220>
 <221> PEPTIDE
 <222> (1)..(15)
 <223> Xaa is Glu or gamma-carboxy-Glu

 <400> 163
 Gly Leu Xaa Xaa Asp Ile Xaa Phe Ile Xaa Thr Ile Xaa Glu Ile
 1 5 10 15

 <210> 164
 <211> 15
 <212> PRT
 <213> Conus stercusmuscarum

 <220>
 <221> PEPTIDE
 <222> (1)..(15)
 <223> Xaa is Glu or gamma-carboxy-Glu

 <400> 164
 Ile Thr Xaa Thr Asp Ile Xaa Leu Val Met Lys Leu Xaa Glu Ile
 1 5 10 15

 <210> 165
 <211> 24
 <212> PRT
 <213> Conus ammiralis

 <400> 165
 Glx Gly Gln Asp Asp Ser Glu Glu Glu Asp Ser Gln Lys Val Met Lys
 1 5 10 15
 His Gly Gln Arg Arg Glu Arg Arg
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 <210> 166
 <211> 17
 <212> PRT
 <213> Conus betulinus

 <400> 166
 Gly Gly Glu Glu Val Arg Glu Ser Ala Glu Thr Leu His Glu Leu Thr

163
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 PRT
 Conus purpurascens

 163
 15
 PRT
 Conus stercusmuscarum

 164
 15
 PRT
 Conus ammiralis

 165
 24
 PRT
 Conus ammiralis

 166
 17
 PRT
 Conus betulinus

1 5 10 15

Pro

<210> 167
 <211> 17
 <212> PRT
 <213> Conus betulinus

<400> 167
 Gly Gly Glu Glu Val Arg Glu Ser Ala Glu Thr Leu His Glu Ile Thr
 1 5 10 15

Pro

<210> 168
 <211> 17
 <212> PRT
 <213> Conus betulinus

<400> 168
 Asp Gly Glu Glu Val Arg Glu Ala Ala Glu Thr Leu Asn Glu Leu Thr
 1 5 10 15

Pro

<210> 169
 <211> 18
 <212> PRT
 <213> Conus betulinus

<400> 169
 Gly Tyr Glu Asp Asp Arg Glu Ile Ala Glu Thr Val Arg Glu Leu Glu
 1 5 10 15

Glu Ala

<210> 170
 <211> 17
 <212> PRT
 <213> Conus betulinus

<400> 170
 Gly Gly Gly Glu Val Arg Glu Ser Ala Glu Thr Leu His Glu Ile Thr
 1 5 10 15

Pro

<210> 171
 <211> 18
 <212> PRT
 <213> Conus bullatus

<400> 171
 Asn Pro Glu Thr Tyr Ile Glu Ile Val Glu Ile Ser Arg Glu Leu Glu
 1 5 10 15

Glu Ile

<210> 172

168 169 170 171 172

<211> 20
 <212> PRT
 <213> Conus bullatus

<400> 172
 Asn Pro Glu Thr Tyr Tyr Asn Leu Glu Leu Val Glu Ile Ser Arg Glu
 1 5 10 15
 Leu Glu Glu Ile
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<210> 173
 <211> 19
 <212> PRT
 <213> Conus catus

<400> 173
 Ser Asp Glu Glu Leu Leu Arg Glu Asp Val Glu Thr Val Leu Glu Leu
 1 5 10 15
 Glu Arg Asn

<210> 174
 <211> 19
 <212> PRT
 <213> Conus catus

<400> 174
 Gly Asp Glu Glu Leu Leu Arg Glu Asp Val Glu Thr Val Leu Glu Leu
 1 5 10 15
 Glu Arg Asp

<210> 175
 <211> 19
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<400> 175
 Ser Asp Glu Glu Leu Leu Arg Glu Asp Val Glu Thr Val Leu Glu Pro
 1 5 10 15
 Glu Arg Asn

<210> 176
 <211> 17
 <212> PRT
 <213> Conus catus

<400> 176
 Ile Glu Glu Gly Leu Ile Glu Asp Leu Glu Thr Ala Arg Glu Arg Asp
 1 5 10 15

Ser
 <210> 177
 <211> 17
 <212> PRT
 <213> Conus catus

<400> 177

Ile Glu Glu Gly Leu Ile Glu Asp Leu Glu Ala Ala Arg Glu Arg Asp
 1 5 10 15

Ser

<210> 178

<211> 29

<212> PRT

<213> Conus catus

<400> 178

Gly Glu Pro Glu Val Gly Ser Ile Pro Glu Ala Val Arg Gln Gln Glu
 1 5 10 15

Cys Ile Arg Asn Asn Asn Asn Arg Pro Trp Cys Pro Lys
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<210> 179

<211> 15

<212> PRT

<213> Conus distans

<400> 179

Thr Ile Thr Ala Glu Glu Ala Glu Arg Thr Ser Met Ser Ser Met
 1 5 10 15

<210> 180

<211> 19

<212> PRT

<213> Conus distans

<400> 180

Glx Glu Thr Pro Thr Pro Glu Glu Val Glu Arg His Thr Glu Arg Leu
 1 5 10 15

Lys Ser Met

<210> 181

<211> 15

<212> PRT

<213> Conus episcopatus

<400> 181

Gly Gly Lys Asp Ile Val Glu Thr Ile Thr Glu Leu Glu Lys Ile
 1 5 10 15

<210> 182

<211> 19

<212> PRT

<213> Conus figulinus

<400> 182

Gly Glu Glu Glu Val Ala Glu Met Ala Ala Glu Ile Ala Arg Glu Asn
 1 5 10 15

Gln Ala Asn

<210> 183

<211> 18

<212> PRT
 <213> Conus figulinus

<400> 183
 Ser Tyr Glu Gln Ala Arg Glu Val Gln Glu Ala Val Asn Glu Leu Lys
 1 5 10 15

Glu Arg

<210> 184
 <211> 34
 <212> PRT
 <213> Conus figulinus

<400> 184
 Ser Tyr Glu Gln Ala Arg Glu Val Gln Glu Ala Val Asn Glu Leu Lys
 1 5 10 15

Glu Arg Gly Lys Lys Ile Ile Met Leu Gly Val Pro Arg Asp Thr Arg
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Gln Phe

<210> 185
 <211> 18
 <212> PRT
 <213> Conus figulinus

<400> 185
 Asp Tyr Glu Asp Asp Arg Glu Ile Ala Glu Thr Val Arg Glu Leu Glu
 1 5 10 15

Glu Ile

<210> 186
 <211> 19
 <212> PRT
 <213> Conus figulinus

<400> 186
 Gly Asn Thr Ala Glu Glu Val Arg Glu Ala Ala Glu Thr Leu His Glu
 1 5 10 15

Leu Ser Leu

<210> 187
 <211> 23
 <212> PRT
 <213> Conus figulinus

<400> 187
 Gly Ser Ile Ser Met Gly Phe Glu His Arg Arg Glu Ile Ala Glu Leu
 1 5 10 15

Val Arg Glu Leu Ala Glu Ile
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<210> 188
 <211> 19
 <212> PRT

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<213> Conus lynceus

<400> 188

Gly Glu Glu Glu Val Ala Lys Met Ala Ala Glu Ile Ala Arg Glu Asn
1 5 10 15

Ala Ala Asn

<210> 189

<211> 18

<212> PRT

<213> Conus lynceus

<400> 189

Gly Lys Glu Glu Asp Arg Glu Ile Val Glu Thr Val Arg Glu Leu Glu
1 5 10 15

Glu Ile

<210> 190

<211> 19

<212> PRT

<213> Conus lynceus

<400> 190

Gly Glu Glu Glu Val Ala Lys Met Ala Ala Glu Leu Thr Arg Glu Glu
1 5 10 15

Ala Val Lys

<210> 191

<211> 24

<212> PRT

<213> Conus purpurascens

<400> 191

Gly Glu Glu Glu His Ser Lys Tyr Gln Glu Cys Leu Arg Glu Val Arg
1 5 10 15

Val Asn Lys Val Gln Gln Glu Cys
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<210> 192

<211> 24

<212> PRT

<213> Conus purpurascens

<400> 192

Gly Glu Glu Glu His Ser Lys Tyr Gln Glu Cys Leu Arg Glu Val Arg
1 5 10 15

Val Asn Asn Val Gln Gln Glu Cys
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<210> 193

<211> 24

<212> PRT

<213> Conus purpurascens

<400> 193

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Gly Glu Glu Glu His Ser Lys Tyr Gln Glu Cys Leu Arg Glu Ile Arg
 1 5 10 15

Val Asn Lys Val Gln Gln Glu Cys
 20

<210> 194

<211> 24

<212> PRT

<213> Conus purpurascens

<400> 194

Gly Glu Ala Glu His Tyr Ala Phe Gln Glu Cys Leu Arg Glu Ile Asn
 1 5 10 15

Val Asn Lys Val Gln Gln Glu Cys
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<210> 195

<211> 15

<212> PRT

<213> Conus purpurascens

<400> 195

Gly Leu Glu Glu Asp Ile Glu Phe Ile Glu Thr Ile Glu Glu Ile
 1 5 10 15

<210> 196

<211> 15

<212> PRT

<213> Conus stercusmuscarum

<400> 196

Ile Thr Glu Thr Asp Ile Glu Leu Val Met Lys Leu Glu Glu Ile
 1 5 10 15

Conus purpurascens